

<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	10/636,180	HU, Y. JEFF	
	Examiner David Nhu	Art Unit 2818	<i>pw</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to 6/2/04.
2.  The allowed claim(s) is/are 1-24.
3.  The drawings filed on 07 August 2003 are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All      b)  Some\*      c)  None      of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. 10/163,289.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftperson's Patent Drawing Review (PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_.
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

**REASONS FOR ALLOWANCE**

1. Claims 1-24 are allowed.
2. The following is an examiner's statement of reasons for allowance: None of the references of record teaches or suggests as cited in claims 1, 11, 15: PVD forming a refractory metal silicide first film above conductive plug; forming a refractory metal silicide nitride second film above the refractory metal silicide first film; and PVD forming a refractory metal third film above the refractory metal silicide second film (as cited in claim 1); PVD forming a refractory metal silicide first film above a conductive plug, wherein the conductive plug includes a characteristic dimension, wherein the refractory metal silicde first film is selected from Msix, wherein M is selected from Ta, TaW...., and combination thereof, wherein and  $0 < x \leq 1.8$ ; reactive PVD forming an amorphous refractory metal silicide nitride second film above the refractory metal silicide first film, wherein the amorphous refractory metal silicide nitride second film is selected from TaNySix, ...., and combination thereof, wherein  $0 < x \leq 2.5$ , and wherein  $0 < y < 1$ ; and PVD forming a refractory metal third film above the amorphous refractory metal silicide nitride second film under conditions to cause an average grain size therein, wherein the average gain size is in a range from about one-tenth the characteristic dimension to larger than the conductive plug characteristic dimension (as cited in claim 11); PVD forming a refractory metal silicide first film above a conductive plug; PVD forming an titanium nitride second film above the refractory metal silicide first film (as cited in claim 15).
3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the

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issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### CONCLUSION

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Hu (6,614,116 B1): Buried Digit Line Stack and Process for Making Same.
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Nhu, (571)279-1792. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM.

The examiner's supervisor, David Nelms can be reached on (571)272-1787.

*The fax phone number for the organization where this application or proceeding is assigned is (703) 308-872-9306.*

*Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.*

David Nhu 



June 12, 2004

DAVID NHU  
PRIMARY EXAMINER